

Case No.: SOMMR-006USC

Patent Appln.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): John P. Chevalier )  
Serial No.: Unknown ) Group No.: : Unknown  
Filed: Herewith )  
For: LATCH ARRANGEMENT FOR ) Examiner: Unknown  
AUTOMOTIVE DOORS OR )  
OTHER ENCLOSURES )  
\_\_\_\_\_ )

PRELIMINARY AMENDMENT

UNITED STATES PATENT  
AND TRADEMARK OFFICE  
P.O. BOX 2327  
ARLINGTON, VA 22202

Dear Sir/Madam:

Prior to initial examination of the subject application, please enter the following preliminary amendment.

**IN THE CLAIMS:**

Please cancel Claim 1-117 without prejudice.

Please add the following New Claims.

1. A latch arrangement for an automotive door or other closure, comprising an electric motor coupled to a rotary driving and indexing member having at least one projection, at least one actuation member arranged to be driven by a respective projection from the driving and indexing member, a means for controlling the electric motor selectively to position the driving and indexing member and thereby to drive the at least one actuation member to perform a required action in the latch assembly for locking or unlocking the latch and a locking member mounted for movement between a locking position and an unlocking position, the indexing member is being coupled for selectively and independently driving the locking member, for electric door opening.

2. A latch arrangement according to Claim 1, wherein each projection and/or each actuation member is resiliently displaceable at the point of mutual contact to follow a limited displacement after completion of the required actuation.

3. A latch arrangement according to Claim 1, in which each actuation member is spring-biased towards its point of contact with the projection from the driving and indexing member.

4. A latch arrangement according to Claim 1, wherein such arrangement is suitable for an automobile door or other closure, for releasably detaining a striker, the latch assembly further comprising: a latch bolt shaped to retain the striker at a latching position and to release the striker at an unlatching position of the latch bolt and means for locking and unlocking the locking member, the locking member being mounted for movement between a locking position at which the locking member retains the latch bolt in its latching position and an unlocking position at which the locking member allows the latch bolt to move to its unlatching position.

5. A latch arrangement according to Claim 4, wherein the driving and indexing member is coupled for selectively and independently driving the locking means, for electric locking and unlocking.

6. A latch arrangement according to Claim 1, in which the driving and indexing member is arranged to drive the means for locking the locking member and also the latch bolt, in

order to complete the closure of the door or other closure.

7. A latch arrangement according to Claim 1, in which the driving and indexing member is arranged to selectively release the locking member to allow the door to open.

8. A latch arrangement according to Claim 5, in which over different phases of its rotary movement, the driving and indexing member selectively drives the locking and unlatching means and the latch bolt.

9. A latch arrangement according to Claim 1, in which the locking member is a pawl.

10. A rotary indexing mechanism for driving actuators in a latch arrangement according to Claim 1.

11. A latch arrangement for an automobile door or other closure, for releasably detaining a striker, comprising: a latch bolt shaped to retain the striker at a latching position and to release the striker at an unlatching position of the latch bolt; a locking member mounted for movement between a locking position, at which the locking member allows the latch bolt to move to its unlatching position; means for locking the locking member; and one electric motor with a driving and indexing output drive coupled for selectively and independently driving the locking member, for electric door opening, and also the locking means, for electric door locking and unlocking; wherein only the said one motor performs the function of door opening and door locking and unlocking.

12. A latch arrangement according to Claim 11, further comprising an electronic central locking arrangement for controlling the said electric motor to selectively lock and unlock the latch.

13. A latch arrangement according to Claim 11, further comprising at least one locking member release lever drivably connectable to an external control and coupled to the locking member for releasing the locking member to allow door opening.

14. A latch arrangement according to Claim 11 further comprising a key mechanism drivably coupled to the locking means for locking and unlocking the locking means manually.

15. A latch arrangement according to Claim 11, in which the locking member is a pawl.

16. A latch arrangement according to Claim 11, in which the driving and indexing output drive comprises a rotary indexing member having at least one projection, and at least two actuation members arranged to be driven by said projection, over different phases of rotary movement of the indexing member to selectively drive the locking member and the locking means respectively.

17. A latch arrangement according to Claim 11, further comprising at least two locking member release levers drivingly connectable to respective external controls and coupled to the locking member for unlocking the locking member, and at least two respective coupling members, each selectively moveable between a coupling position at which the coupling member couples drive from the respective locking member release lever to the locking member, and a neutral position at which the coupling member does not; in which the electric motor is drivingly coupled through the indexing output drive to both coupling members for selective actuation thereof either separately or together, whereby controlled movement of the electric motor controls the selective coupling or decoupling of each said external control.

18. A latch arrangement according to Claim 11, further comprising an actuation member adapted to be connected, in use, to an interior door knob, and capable of being driven between a neutral position, at which the door is deadlocked because the door knob is operatively uncoupled from the locking means, and an active position, at which the door is not deadlocked and the door knob controls the locking means to lock or unlock the locking member; in which the electric motor driving and indexing output drive is coupled to the actuation member for selective deadlocking; wherein the motor performs the functions of door opening, door locking and unlocking and unlocking, and deadlocking control.

19. A latch arrangement according to Claim 11, in which the said electric motor driving and indexing output drive is arranged selectively and independently to drive the latch bolt, either by direct abutment or through a mechanical drive coupling, to effect completion of the closure of the latch bolt to complete closure of the door.

20. A latch arrangement according to Claim 11, in which every motor-driven function, is capable of being mechanically overridden by a corresponding manual mechanical drive.

#### **REMARKS**

Claims 1-117 have been cancelled. New Claims 1-20 have been added.

Claim 1 is believed to be novel and non-obvious over Matsumoto and Shimada, by virtue of the limitation in the claim to an electric motor-operated rotary driving and indexing member which controls door locking and unlocking as well as electric door opening. Prior art references disclose electrical central locking systems, with an electric motor controlling locking and unlocking, but the

motors are unable to control other functions in the latch. In accordance with the present invention only one motor is required, with major savings on components including wiring and in the weight and size of the system. Cost is significantly reduced.

Matsumoto U.S. Patent 4762348 and Shimada US Patent 5411302 both disclose the use of only one electric motor in an index drive mechanism for electrical door opening and for electrical door closing under power. These features are also disclosed in Rogers US Patent 5639130, which further discloses a mechanical override and control, giving independence of mechanical operation from electrical operation.

As understood, Matsumoto '348 does not disclose the use of the indexer for door locking or unlocking. Locking and unlocking is achieved by electrical switches SW4 and SW6 arranged on the door sill (column 3, lines 7 to 12) and switches SW3 and SW5 operated by the key cylinder c(column 2, lines 67 and 68). These switches make or break circuits in a control device 8, which interrupts power to the motor to prevent door opening when the handles are operated.

Shimada '302 appears to disclose a boot latch mechanism with a latch bolt 60 and a locking member (locking plate 70), together with a mechanism 25 for releasing the striker in an emergency situation by actuating the latching member 70. There is no lock for the locking plate, i.e., no locking means for locking and unlocking the locking member. It is not suggested how this boot latch could be used for example with an electrical central locking system, and no key mechanism is shown. Accordingly, the present invention is believed to be patentably distinct in relation to the references.

Should the Examiner have any additional inquiries or suggestions to facilitate the Application toward an early Notice of Allowance, the Examiner is invited to contact the Applicant's representative at the telephone number listed below.

Respectfully submitted,

Date: Nov 23, 2001

By: Bruce B. Brunda

Customer No.: 007663

Bruce B. Brunda  
Registration No. 28,497  
STETINA BRUNDA GARRED & BRUCKER  
75 Enterprise, Suite 250  
Aliso Viejo, CA 92656  
(949)855-1246